

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-029986**Date Inspected:** 07-Sep-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 600**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1430**Contractor:** Steward Machine Co.**Location:** Birmingham, AL**CWI Name:** Fred Hudson**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** E2 Shear Key Anchorages**Summary of Items Observed:**

Quality Assurance Inspector (QAI) Andrew Webster was present on the date and times noted above in order to observe the fabrication and Quality Control (QC) functions performed by Steward Machine Company for the E2 Shear Key Anchorages for the SFOBB project. The following items were observed:

Steward Machine - Plant 1:

This QAI performed a walkthrough at the shop to verify plates on site and to observe Steward Machine personnel at work machining and welding. Work performed at the Steward Machine shop as noted below:

CNC Machine #176 milling plate S4C-g4. (Offline)

CNC Machine #211 milling plate S3C-g3. (Milling excess stock off ends)

CNC Machine #225 milling plate S3C-a3. (Milling inside radius); (finished at 0900)

CNC Machine #245 milling plate S4B-h4. (Milling excess stock off ends)

The following plates were noted staged throughout the shop in various stages of processing.

Bay 1 – Plates:

S3B-h3. Formed, stressed relieved and partially machined.

Bay 2 – Plates:

S3C-h3. Formed, stressed relieved and partially machined.

S4C-h4. Formed, stressed relieved and partially machined.

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

Bay 3 – Plates:

S3B-e3. Formed, stressed relieved and partially machined.
S4B-e4. Formed, stressed relieved and partially machined.
S3C-e3. Formed, stressed relieved and partially machined.
S4C-e4. Formed, stressed relieved and partially machined.

Bay 4 – Plates:

S3B-a3. Formed, stressed relieved and partially machined.
S3B-b3. Formed, stressed relieved and partially machined.
S3B-c3. Formed, stressed relieved and partially machined.
S3B-f3. Formed, stressed relieved and partially machined.
S3B-g3. Formed, stressed relieved and partially machined.
S3C-b3. Formed, stressed relieved and partially machined.
S3C-c3. Formed, stressed relieved and partially machined.
S3C-d3. Formed, stressed relieved and partially machined.
S3C-f3. Formed, stressed relieved and partially machined.
S4B-a4. Formed, stressed relieved and partially machined.
S4B-b4. Formed, stressed relieved and partially machined.
S4B-c4. Formed, stressed relieved and partially machined.
S4B-d4. Formed, stressed relieved and partially machined.
S4B-f4. Formed, stressed relieved and partially machined.
S4B-g4. Formed, stressed relieved and partially machined.
S4C-a4. Formed, stressed relieved and partially machined.
S4C-b4. Formed, stressed relieved and partially machined.
S4C-c4. Formed, stressed relieved and partially machined.
S4C-d4. Formed, stressed relieved and partially machined.
S4C-f4. Formed, stressed relieved and partially machined.
Pallet of R3 plates.

Welding jig Bay 4 – S10C assembly Plates:

S10C-a1. Formed, stressed relieved and partially machined.
S10C-a2. Formed, stressed relieved and partially machined.
S10C-b1. Formed, stressed relieved and partially machined.
S10C-b2. Formed, stressed relieved and partially machined.
S10C-c1. Formed, stressed relieved and partially machined.
S10C-d1. Formed, stressed relieved and partially machined.

This QAI noted the welding of the above mentioned plates in the welding jig. The welding was done by qualified welders Jeffery Hennington (476) and Benjamin Rhodes (481). The welding was done to the approved welding procedure (WPS) P2-W126-B. All welding done was monitored by Certified Welding Inspector (CWI) Fred Hudson. Welding was done on the shear key side. Welding was completed at 1300.

This QAI was informed that welding on the night shift would begin on Monday the 9th of September. This QAI was also informed that welder John Roy (469) would be at Plant 1 to weld on the day shift as well. This QAI noted

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

that this welder (469) was not approved to weld on this Caltrans project (based on the approved welder list) due to not being submitted for approval. This QAI informed Steward Machine QC Inspectors of this issue. Steward Machine QC Inspectors provided paper work they said was submitted and approved for this welder (469) to weld. This QAI has requested verification of this submittal and approval from his Lead QAI and SMR.

This QAI noted the welding of the b10 plates to the S10B assembly. The welding was done by qualified welder Daniel Rowe (73). The welding was done to the approved welding procedure (WPS) P2-W128-B. All welding done was monitored by Certified Welding Inspector (CWI) Fred Hudson. After the root pass was welded in all four lugs Magnetic Particle Testing (MPT) was performed by the QC Inspector and this QAI. During the cooling of the welds it was noted by the welder that the lug plates were out of square to the part. The S10B was moved to a table where clamps were applied to the lugs to hold keep them from moving out of square more. During welding welder Daniel Rowe checked the square of the lugs and made adjustments to the clamps to keep them in square to the S10B assembly.

Hardie Tynes:

This QAI performed a walkthrough at the shop to verify plates on site and to observe Hardie Tynes personnel at work machining plates. Work performed at the Hardie Tynes shop as noted below:

It was noted by this QAI that there was no work being performed for this job at Hardie Tynes today.

The following plates were noted staged on the shop floor for further processing.
S3B-d3. Formed, stressed relieved and partially machined.

NON-DESTRUCTIVE TESTING (NDT).

The QA performed NDT on the following.

Assembly S10B (After Machining, Non-Shear Key side) at Steward Plant 1:

- Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S10B (After Machining, Shear Key side) at Steward Plant 1:

- Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

It was noted to this QAI that the S10B assembly has visual linear indications that may exceed 1.5mm and need to be verified with QC prior to being repaired per the Special Provisions for this project.

Assembly S10B (After Machining, East End) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S10B (After Machining, West End) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S10B (Root Pass, b10 lugs 1 to 4 from west end to east end) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

The Non Destructive Testing (NDT) listed above were observed performed and accepted by the QC Inspectors prior to the QA Inspector performing the tests. The QC Inspectors performed 100% NDT with the QA Inspector performing over 10% NDT.



Summary of Conversations:

During the welding of the b10 lugs to the S10B assembly this QAI voiced his concern to SMR Courtney Goldstein of the d1 plate expanding during the welding process and possible cracking the PJP weld that will connect two of the b10 lugs to the S10B assembly. SMR Ms. Goldstein took this QAI's concern and relayed it to SMR Aaron Prchlik.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Gary Thomas 916-764-6027, who represents the Office of Structural Materials for your project.

Inspected By: Webster, Andrew

Quality Assurance Inspector

Reviewed By: Foerder, Mike

QA Reviewer
